

# Integrated Pest & Crop Management

## Nutrient Management Courses Scheduled for 2011

By John Lory

Two nutrient management courses have been scheduled for early 2011: the "Nutrient Management Planning Course" and the "Advanced Nutrient Management Course."

These courses provide training for anyone with an interest in managing nutrients on farms, particularly farms using animal manure as a fertilizer. These courses also provide training and continuing education credits for Certified Crop Advisors (CCAs) and Concentrated Animal Feeding Operation (CAFO) Operators.

### *The "Nutrient Management Planning Course" is a two-part course.*

- ♦ **Part 1:** The classroom session will be March 15 to March 17, 2011. Topics covered in this part of the course include current NRCS and regulatory policies, water quality management, nutrient management calculations such as plant available nitrogen in manure, phosphorus-based management and manure economics.
- ♦ **Part 2:** The calculation/field session is held twice (attendees chose one) either April 18-20, 2011 or April 20-22, 2011. These sessions include a field trip to the MU Dairy, hands-on calculations related to nutrient management and active discussion sessions.

Approval is pending for 7.5 Soil and Water and 23.5 Nutrient Management continuing education units (CEUs) for CCAs. We will apply for 32.5 CEU's for CAFO Operators and for 29.5 CEUs for Wastewater Operators.

This course is highly recommended for anyone who plans to write nutrient management plans for animal feeding operations in Missouri. It also covers many need-to-know components for certified CAFO operators.

The cost of the two-part course is \$400 and includes the cost of three lunches. All sessions will be held at the teaching facility at the University of Missouri Bradford Farm east of Columbia.

The "Advanced Nutrient Management Course" is an annual course that will be held February 16-17, 2011. There are no prerequisites for this course and it covers different topics each year.

The year's course touches on a number of topics including:

- ♦ Record keeping requirements for CAFOs,
- ♦ Hands-on computer session estimating erosion using RUSLE2,
- ♦ Discussion: Can manure applications lead to problems in crop and animal production?
- ♦ Using feed information to estimate manure nutrient content.
- ♦ Review of manure and soil testing strategies.

We are requesting approval for 8.5 Nutrient Management and 3.5 Soil and Water CEUs for CCAs and for 12.0 CAFO Operator CEU's. The session will be held at the teaching facility at the University of Missouri Bradford Farm east of Columbia. The cost for the advanced course will be \$185 and includes two lunches.

*Continued on page 3*

### Table of Contents

#### **Nutrient Management Courses Scheduled for 2011**

Page 1

#### **Can I Skip P and/or K Fertilizer Applications for a Year?**

Page 2

#### **2011 Drainage Workshop**

Page 3

#### **2011 Pest Management Guide Now Available!**

Page 3

#### **Weather Data for the Week Ending January 19, 2011**

Page 4



# Can I Skip P and/or K Fertilizer Applications for a Year?

By John Lory

Whenever fertilizer prices spike higher a common question is “Can I safely take a year off fertilizer P and K applications?” The quick answer is that if you maintain your soil test levels at or above MU target levels there is little risk of yield loss from taking one year off fertilizer applications.

To understand why requires understanding the details of how phosphorus and potassium fertilizer recommendations are developed. The first piece of information needed to answer this question is how much phosphate and potash are extracted from the soil by a crop. I am going to work with corn as the example crop. A yield goal of 200 bushels per acre is greater than or equal to yield goals for corn for most of Missouri. Two hundred bushels of corn removes 70 lbs of phosphate per acre and 50 lbs of potash per acre.

The removal of this phosphate and potash will lower soil test levels in the field.

- A “typical” soil changes one pound per acre soil test P with the addition or removal of 10 lbs per acre of phosphate. Removal of 70 lbs

per acre of phosphate will lower the soil test level of the field about seven soil test units.

- A “typical” soil changes one pound per acres soil test K with the addition or removal of 3 lbs per acre of potash. Removal of 50 lbs per acre of potash will lower the soil test level of the field about 17 soil test units.

The exact change in soil test levels will depend on soil properties. Clayey soils tend to change less and sandy soils tend to change more with removal of the same amount of P or K.

In Missouri, the target soil test P level is 45 lbs per acre and for K is 265 to 300 lbs per acre. However, a field with this soil test level actually is mixed bag of soil test levels, with some areas of the field having higher soil test levels and some areas with lower soil test levels.

As an example of this, Figure 1 shows the distribution of soil test levels on a three-acre field at the MU Forage Systems

*Continued on page 3*

**Figure 1. Can I Skip P (Or K) this Year?**

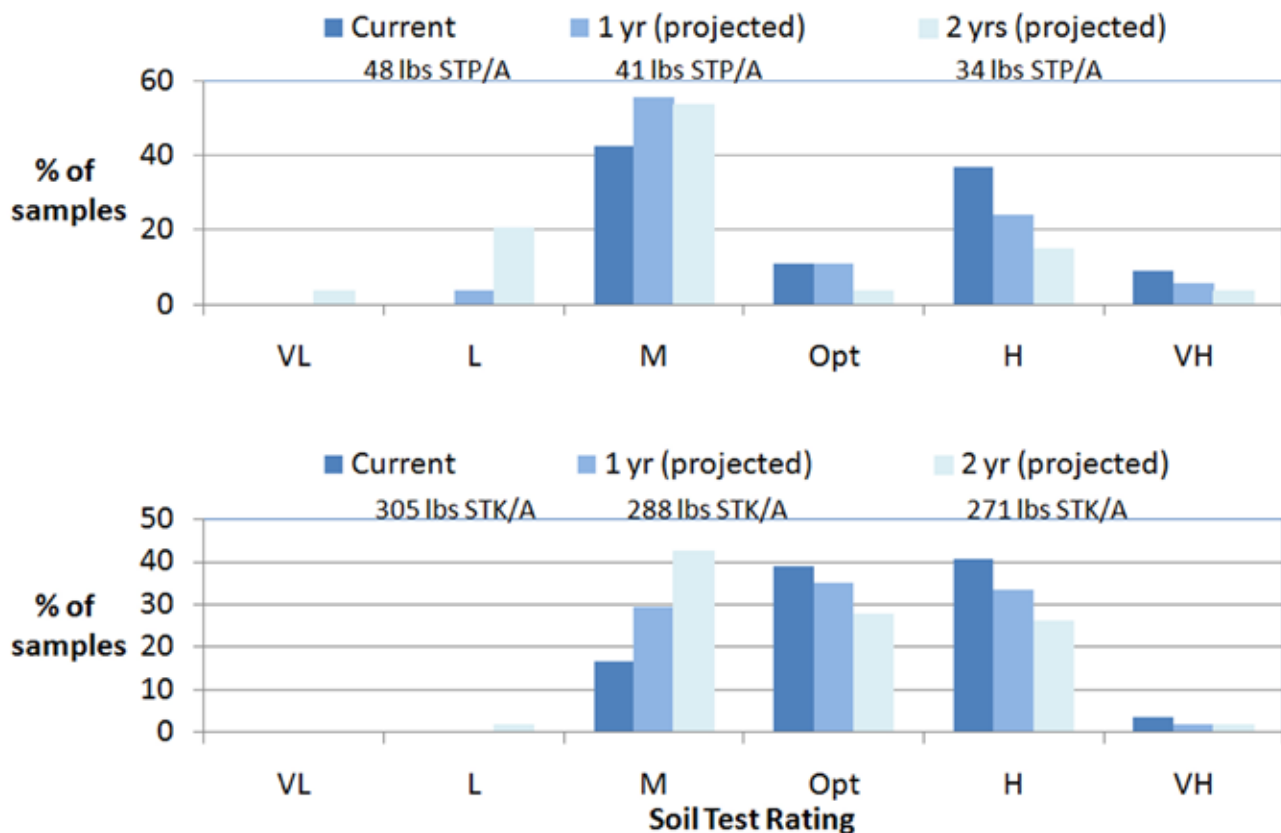


Figure 1. Projected impact of not applying P or K on the distribution of soil test levels in a field. “Current” data is from a three-acre field divided into 54 2500-square foot sections at the MU Forage Systems Research Center in Linneus, MO. Soil was sampled to six inches depth and each sample was comprised of 20 cores from the sampled area. Projected values assume removal of 70 lbs/acre phosphate and 50 lbs/acre potash each year.

---

## Can I Skip P and/or K Fertilizer Applications for a Year? *continued from page 2*

Research Center in Linneus Missouri. We divided the field into 54 2500-square foot areas and sampled them separately. The mean soil test P level was 48 lbs per acre and soil test K was 305 lbs per acre, both close to optimum. At this soil test level no part of the field was in the very low or low soil test category (see the dark blue bars in Fig. 1). About 60% of the field has a soil test level that is at or above optimum level for P and over 80% of the field is at or above optimum for K.

Target soil test levels are set recognizing that this level of variation exists in a field. This leads to setting the target level somewhat higher than what would be needed if the field were more uniform. The target level is set so that probability is low that any part of the field is unlikely to have restricted yield because of low soil test levels.

Figure 1 also shows the projected soil test distribution in the field if no P or K is applied for one or two years. In this example, less than 5% of the field moves into the low category for P with one year off from maintenance P applications. For K, it is projected to take two years of no application to lower any part of the field into the low category.

So taking a year off applying maintenance P or K applications will lead to a decrease in soil test level in your field. This drop is unlikely to reduce yield in your field if soil test P and K is at or above current MU targets. Consequently, this can be a reasonable strategy to cope with a short-term upward spike in fertilizer prices.

*John Lory*  
*LoryJ@missouri.edu*  
*(573) 884-7815*

---

## Nutrient Management Courses Scheduled for 2011 *continued from page 1*

Pre-registration is required for both courses. To register contact Christina George (573-884-6311; GeorgeCR@missouri.edu). For more information about either course contact John Lory (573-884-7815; LoryJ@missouri.edu). More details about the courses including agendas and a speaker list are available on line at <http://nmplanner.missouri.edu/training/>.

Both courses are sponsored by the University of Missouri Commercial Agriculture Program, University of Missouri Extension and the Natural Resource Conservation Service.

*John Lory*  
*LoryJ@missouri.edu*  
*(573) 884-7815*

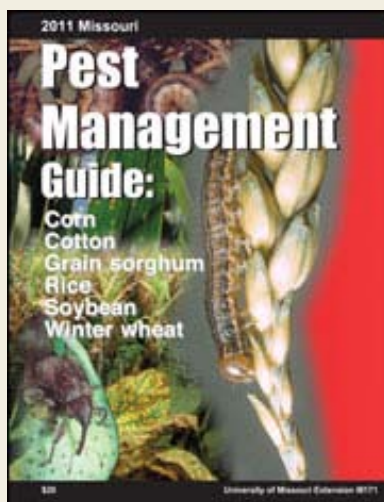
## 2011 DRAINAGE WORKSHOP

Designing & Installing Subsurface Agricultural Drainage Systems

The Natural Resources Conservation Science Services (NRCS), Missouri Department of Natural Resources, University of Missouri (MU), and Missouri Land Improvement Contractors Association (LICA) have partnered to present this conference on integrated water management design and installation.

**FEB. 16-18, 2011**  
**CHILLICOTHE, MO**

For more information, contact  
Deb Dickens at **573-634-3001**  
or by email at **mlica@aol.com**



## 2011 PEST MANAGEMENT GUIDE **NOW AVAILABLE!**

The 2011 Pest Management Guide (M171) is now available for purchase through MU Extension. This publication contains over 200 pages of recommendations pertaining to the control of weeds, insects, and diseases in Missouri corn, cotton, grain sorghum, rice, soybean, and winter wheat. New to the version this year is weed, insect, and disease control recommendations for cotton and rice in Missouri.

This publication is available at a cost of \$20 per copy. It can be purchased by calling 573-882-7216 or can also be ordered online at <http://extension.missouri.edu/publications/DisplayPub.aspx?P=M171>. More information about M171 as well as a free PDF version of the publication can be found online at <http://extension.missouri.edu/explorepdf/manuals/m00171.pdf> and <http://weedsience.missouri.edu/extension/extension.htm>.

# Weather Data for the Week Ending January 19, 2011

By Pat Guinan

Station	County	Weekly Temperature (°F)						Monthly Precipitation (in.)		Growing Degree Days‡	
		Avg. Max.	Avg. Min.	Extreme High	Extreme Low	Mean	Departure from long term avg.	Jan. 1 - Jan. 19	Departure from long term avg.	Accumulated Since Apr. 1	Departure from long term avg.
Corning	Atchison	26	10	39	-7	19	-6	0.09	-0.40	*	*
St. Joseph	Buchanan	27	12	39	-2	20	-5	0.11	-0.30	*	*
Brunswick	Carroll	28	12	39	-7	21	-6	0.09	-0.60	*	*
Albany	Gentry	26	7	39	-16	18	-7	0.09	-0.41	*	*
Auxvasse	Audrain	32	15	41	-4	24	-3	0.17	-0.97	*	*
Vandalia	Audrain	31	15	39	-3	23	-4	0.11	-1.16	*	*
Columbia-Bradford Research and Extension Center	Boone	33	14	41	-4	24	-4	0.12	-1.04	*	*
Columbia-Sanborn Field	Boone	33	18	43	0	26	-3	0.13	-1.05	*	*
Williamsburg	Callaway	34	17	44	-2	26	-2	0.13	-1.20	*	*
Novelty	Knox	28	9	37	-6	19	-7	0.16	-0.56	*	*
Linneus	Linn	28	11	38	-7	20	-5	0.17	-0.35	*	*
Monroe City	Monroe	31	12	39	-3	22	-5	0.16	-0.74	*	*
Versailles	Morgan	36	18	45	1	27	-3	0.04	-1.10	*	*
Green Ridge	Pettis	32	15	41	-6	24	-3	0.12	-0.86	*	*
Lamar	Barton	38	19	44	-2	29	-3	0.02	-1.09	*	*
Cook Station	Crawford	39	18	46	-4	29	-3	0.17	-1.34	*	*
Round Spring	Shannon	40	18	52	0	28	-4	0.26	-1.32	*	*
Mountain Grove	Wright	39	20	48	0	29	-1	0.12	-1.50	*	*
Delta	Cape Girardeau	40	24	51	12	31	-1	0.17	-1.71	*	*
Cardwell	Dunklin	41	26	50	11	34	-1	0.26	-1.79	*	*
Clarkton	Dunklin	41	24	49	11	33	-1	0.15	-1.79	*	*
Glennonville	Dunklin	41	26	48	14	33	-1	0.12	-1.80	*	*
Charleston	Mississippi	41	25	49	11	33	0	0.40	-1.64	*	*
Portageville-Delta Center	Pemiscot	42	27	50	15	34	0	0.30	-1.90	*	*
Portageville-Lee Farm	Pemiscot	41	27	49	15	34	0	0.29	-1.83	*	*
Steele	Pemiscot	42	27	50	14	35	0	0.28	-1.63	*	*

\* Complete data not available for report

‡Growing degree days are calculated by subtracting a 50 degree (Fahrenheit) base temperature from the average daily temperature. Thus, if the average temperature for the day is 75 degrees, then 25 growing degree days will have been accumulated.

Weather Data provided by Pat Guinan  
 GuinanP@missouri.edu  
 (573) 882-5908

*Insect Pest & Crop Management* newsletter is published by the MU IPM Program of the Division of Plant Sciences Extension. Current and back issues are available on the Web at <http://ppp.missouri.edu/newsletters/ipcmindex.htm>. Mention of any trademark, proprietary product or vendor is not intended as an endorsement by University of Missouri Extension; other products or vendors may also be suitable.  
 Editor: Jessica Kohler (kohlerj@missouri.edu).